

principles, which were expressed in his communion with the Protestant Episcopal Church.

In his profession he was behind none of the leaders of the bar, for Mr. Gowen ranked among the great lawyers of the country.

His last, or among the latest of his professional achievements, was the decision (March 20, 1890), of the Supreme Court of Ohio, in the case of Rice against the railroads under the Inter-State Commerce Law.

Had Mr. Gowen been tempted by the inducements held out to him to enter political life, he would have attained the distinction of a statesman in that high order of men who made their mark in their time on our history. His extraordinary capacity for orally expressing his opinions, his command of language, his wonderful memory, not needing the aid of written notes to direct the course of his argument, the attraction of his manner and his personal presence would have established his position as an orator.

Less than is here said would have been an injustice to the memory of our lamented colleague. It is at best but a tentative effort, and when the color of the perspective round the prominent figure, which Mr. Gowen became in the circle of the physical scientists of his day, is mellowed by age, then his biography will be the just tribute to his phenomenal character.

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*Obituary Notice of Leo Lesquereux. By J. P. Lesley.*

*(Read before the American Philosophical Society, March 21, 1890.)*

The venerable botanist and palæo-botanist, Leo Lesquereux, of Fleurier, Switzerland, late of Columbus, Ohio, has been a member of this Society since his election, January 18, 1861. Born in 1806, and dying on the 20th of October, 1889, his long life was full of unusual adventures, and great discoveries.

When a boy, on one of his excursions to find new flowers, he fell from the top of the mountain which walls the Val de Travers on the north. Rolling and dropping from cliff to cliff, a descent of several hundred feet, he was found by his family hanging in the branches of a tree, mangled in every part of his body, and apparently dead; but after lying insensible for several weeks, he recovered health and strength, and continued his boyish explorations as though nothing had happened. The place is in full view of his father's house in Fleurier, and is pointed to by the villagers as Lesquereux's cliff. Just below it to the right the Pontarlier Railway line from Neufchatel to Paris, leaves the Val de Travers and enters the gate-like gorge across which the Swiss stretched their iron chain to keep the marauding Burgundians in check.

This gorge is similar in its general features to that of our Lehigh river

from Mauch Chunk upward ; a trench two thousand feet deep cut from north to south across one of the extensive limestone plateaus of the Jura range ; the upper surface of the plateau being occupied partly by reclaimed farm lands and villages, and in part by unreclaimed peat bogs traversed by artificial drains, and quarried periodically for fuel. These peat bogs were the young botanist's favorite tramping grounds ; and he got to know every safe and every dangerous spot on their treacherous surfaces. He made the acquaintance of every flower that grew on them and on the surrounding cliffs. He devised for himself an auger, like a flour inspector's, with an adjustable handle ; and with this tool he investigated the character and structure of the bog, its stratification, the specific gravity of its different layers, the deformation of the sphagnum by pressure, and the rate of its growth. He was the first to determine the true causes and conditions of peat formation ; unconsciously making the first step in the science of the geology of coal.

Going for his education to Neufchatel, his results were not accepted by the naturalists, until, a Cantonal Commission being appointed, Agassiz being one of the commissioners, he was permitted to demonstrate the subject on the surface of the bog itself ; then his theory was accepted. I have in manuscript an autobiography of the earlier portions of his life, and his naïve expressions of satisfaction at this victorious defense of his young scientific work are very amusing. The whole of this manuscript, written for my pleasure three or four years ago, is well worth a place in the published Proceedings of this Society, and I am tempted to enrich from its store of racy details this poor sketch of his most noteworthy career.

When twenty-four years old (1830) he married the daughter of one of Goethe's intimate friends, General Von Wolffskeel, the Baroness Sophia of Eisenach. Three sons and a daughter of this most happy union survive him. His wife would tell how she used to sit on Goethe's knee, while the poet and her father conversed together. The account of his courtship and wedding given in the manuscript makes charming pictures of German life.

Lesquereux had been appointed to a chair in the College at La Chaux de Fonds. But his career as teacher of science was suddenly cut short by an illness which destroyed his hearing. He went for relief to Paris, but was treated by a noted oculist and aurist there with the brutal recklessness customary at that time in the medical profession of that metropolis, and which is not entirely unknown even at the present day. His eustachian tubes were burst, and an inflammation of the brain superinduced which threatened to destroy his sight. When he returned home he became stone deaf, and never heard a sound from that time to the day of his death. In despair he learned the trade of a chaser of the backs of watches, but gradually lost his health and courage and was long nursed by his devoted wife. Then the strength of her admirable character made itself known ; for she practiced her husband's art, and supported the family herself, until he could resume his handicraft. Twelve years he engraved watches and

made and tempered watch-springs, a delicate process, the knowledge of which was hereditary in his family.

At the age of nearly forty his fame as a bryological botanist induced the King of Prussia to commission him to examine and report on the origin, growth, size, quality and condition of the peat bogs of that kingdom. Neufchatel the Canton still belonged to Prussia. He had been commissioned by the Cantonal government and had reported on the peat bogs of the Jura. Now he traversed the mountains of Germany, the shores of the North sea and Baltic, and after publishing his report at Geneva, examined the bogs of Denmark, Sweden and Norway, and if I mistake not some of those of Great Britain; but of this I am not sure; and still later those of Canada and the United States: taking into the range of his researches the Dismal Swamp of Virginia and North Carolina; and going out alone, unarmed and deaf, far over the prairies of the West, sleeping on the grass without covering, sometimes several nights in succession.

Lesquereux followed Agassiz, Desor, Guyot and Matile to America in 1848. He settled his family in Columbus, Ohio, where his sons began business on several thousand dollars' worth of watches loaned for this purpose by their father's friends, who took that method of enlarging their trade. Agassiz had promised him scientific employment, but was unable to carry into effect his friendly intentions. The family were at first in great distress; afterwards they prospered; and the father was able to devote the rest of his life to his adopted science. He was always poor; his work always poorly paid; but he was one of the wisest, most cheerful, and most contented of mortals. His modesty ran into self-depreciation; a sentiment sadly reinforced by the physical infirmity which cut him off from easy intercourse with his fellow-men, and made him not only unduly grateful for the salaries or fees which he received for work ordered, but unduly modest in the estimation which he placed upon his work. He reminded me of some gentle wild beast or bird living on the chance resources of nature, patient when he found but little, most thankful when he found anything. But a very noble independence was manifest in all his intercourse with others. His manners were simplicity and refinement embodied and illustrated. His considerateness was best shown by the restraints he imposed upon himself in conversation. His visits even to his best friends were rare and short. He made excuse that it must be a wearisome act of friendship to talk to a stone-deaf man. Yet he was a delightful interlocutor.

Only to those who grew accustomed to conversing with the lips alone did he feel quite free to hold intercourse. He read language by watching the movements of his friend's mouth. When introduced to a stranger, and usually when meeting one of his old friends, the first question was: "Will you speak in German, in French, or in English?" and according to the answer he prepared himself for the conversation. "Did you tell me that your friend Lesquereux was deaf?" said one to me one day. "Yes." "But how is that possible? I noticed him talking French in the most

animated manner with his friend just now, and he seemed to hear him as well as you or I could."

With those who wore beards it was more difficult, and he was obliged to beg a repetition of many sentences. But with most persons he carried on conversation in writing, always carrying tablets and pencils with him for that use. Experience had also taught him to gather up all the loose papers on which there were any sentences of the conversation, and throw them into the fire before he left the room, or tear them to pieces if in the open air. So expert was he in interpreting what was said to him, that he usually gathered the whole of a sentence by watching the first few words of it written. He seldom permitted the sentence to be finished. I suppose this quickness was not a mere consequence of his intellectual cultivation, but was one of the many necessities he felt for diminishing what he considered the burden which his infirmity laid on his interlocutors; he was so delicately generous to others; and making no distinction at all between the highest and lowest class of man.

Lesquereux took no part in politics. I think they did not interest him. His friend, Agassiz, was a born aristocrat. His friend, Desor, was a democrat of the most pronounced type, and continued to be one of the two most influential leaders of the Democratic party in the Canton, after the not bloodless revolution which made Neuchâtel free of Prussia, until his death in 1886. But Lesquereux's letters to me through nearly thirty years scarcely mentioned the political situations on either side of the Atlantic; with one exception; he deeply sympathized with the preservation of the Union, and the emancipation of the slaves.

Lesquereux's religious opinions, if he had any, are unknown to me. But I have innumerable evidences in his letters that he entertained a very remarkable faith in an Overruling Providence, as fixed as it was simple. "I have known what it was to have no bread for my family," he writes in one of his letters, "but the good God has never forsaken me." I am reminded that I compared him to Heinrich Stilling, after reading one of his cheery pages, in reply to some desponding confidences of my own less sure faith. I am sure that not a complaining expression can be found in our long correspondence.

I first met Lesquereux in Schuylkill county, Pa., in the summer of 1851. Prof. H. D. Rogers was revising the Anthracite region for his Final Report. Desor, who had worked with Agassiz in Boston and on Lake Superior, had accepted an offer to study the surface deposits of Pennsylvania; and Lesquereux, who was employed to provide a report on the Coal plants of the State, sat day after day on the Anthracite tip-heaps, collecting and classifying whatever the roof shales afforded him. His names, descriptions and figures were published seven years later (1858) in the Second Volume of the Geology of Pennsylvania.

His "Fossil Coal Flora of Arkansas" was published in 1860.

His "Fossil Coal Plants of Illinois" appeared in Worthen's Second and Fourth Volumes in 1866, 1880.

His "Tertiary Plants of Mississippi" appeared in Hilgard's Report of 1863.

His "Cretaceous Flora of the Dakota Group" appeared as a monograph in 1874, as a "Report of the U. S. Geol. and Geog. Survey of the Territories" under Dr. Hayden.

His monograph of the "Pliocene Flora of the Auriferous Gravel Deposits of the Sierra Nevada" appeared in 1875.

His "Tertiary Flora" as a monograph in 1878.

His "Cretaceous and Tertiary Flora" as a monograph in 1883.

"The Coal Flora of Pennsylvania and the United States," Report P of the series of geological reports of that State, Vols. i, ii in one, with an atlas in a separate volume, 1880, and Vol. iii, text and plates, 1884, was the fruit of his more or less continuous connection with the State Survey from 1875. He regarded it as the crowning labor of his life, and resumed into it all his knowledge of the flora of our coal measures. Another volume, in preparation at the time of his death, was intended to contain the figures and descriptions of about a hundred new species, some of them of exceptional beauty and interest; and many of which were founded on specimens in the rich private collection of his most intimate friend and fellow-worker, Mr. R. D. Lacey, of Pittston, Pa., who looked much after the old man's comfort, and frequently entertained him as his guest for days and weeks together, most of the time being spent in examining, comparing and discussing doubtful species and new discoveries.

For his comparisons of foreign species, his three principal correspondents were Schimper of Strasburg, Heer of Zurich, and Count Saporta. Schimper was one of his earliest intimates in botany and he was never willing to consider a question settled until after letter after letter had passed between them. His American studies of the Cretaceous and Tertiary floras of America supplied copious and constant food for botanical correspondence with Heer.

In the earlier years of his residence in the State of Ohio he was employed by Mr. W. S. Sullivant, a wealthy citizen of Cincinnati, a bryologist given to the study of mosses, and assisted him in the publication of many new species. This brought him into intimate correspondence with the well-known bryologist of Philadelphia, Mr. Thomas P. James, a member and officer of this Society. After Mr. James left Philadelphia to reside in Cambridge, Mass., Mr. Lesquereux's botanical intercourse with him was constant and fruitful, and much of the value of the "Manual of the Mosses of N. America," published in their respective names, was due to the zeal with which he thus kept alive those earliest studies of his life. Another of his closest friends was the veteran professor of botany at Lafayette College, Easton, Pa., Thomas C. Porter, who has some amusing anecdotes to tell of their adventures among the rare plants surviving on the banks of the Delaware.

Lesquereux was elected a member of this Society January 18, 1861, and of the National Academy of Sciences in 1864, the year following its consti-

tution by the Senate and House of Representatives of the United States ; but his deafness excused him from attendance at the meetings, and his membership was understood to be in honorable testimony to his character. Many other learned bodies in Europe and America also placed his famous name on their lists ; among these the Geological Societies of London and Brussels made him a corresponding member ; and he continued to be accounted by his *Alma Mater*, the Academy of Neufchatel, one of its honorary professors.

Lesquereux did not attempt further field work after 1884. He was then 78 years old. The last five years of his life were passed in quiet retirement in his cottage on the edge of Columbus, at which books, monograph pamphlets, and specimens of fossil plates for identification or description were constantly arriving from old correspondents and fresh young workers. He began to lament the widowed loneliness and failing brain-power of old age, and predicted his own death from spring to spring. But his strength held out until the end of the summer of last year, after which he existed in an almost insensible condition, and in a few weeks peacefully ceased to breathe.

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*Description of a New Species of Pteropus. By Harrison Allen.*

(Read before the American Philosophical Society, March 21, 1890.)

**PTEROPUS LANIGERA, sp. nov.**

Crown covered with dark gray, unicolored hair. The hairs between the eyes are directed backward, but over the rest of the crown are erect. Face everywhere hairy. In front and below the eye the hair is thicker than elsewhere. On the cheeks and lips the hair is directed downward, while on the horizontal ramus of the lower jaw it is directed backward. The region of the whisker is composed of long, woolly hair of the same nature as that of the crown but of an obscure brown shade, and extends like a collar to the neck. The under surface of the head, therefore, unusually full and woolly. The space between the rami to a point a short distance back of the rictus is of a dark brown.

The side of the neck covered with long, brown, unicolored hair, the same color passing more to the front of the neck than to the back where the shade is of a gray tinge. The base of the prebrachium ventrally is covered with long, woolly hair as on the side of the neck.

The side of trunk with long, silky, unicolored brown hair, the front the same with ashy tips. The middle of the chest is remarkable for exhibiting a pure gray-white spot the size of an almond. In one specimen the hair of the spot is unicolored, and in the other it retains a black-brown base. The inframammary region is the same as the front and conceals the inter-femoral membrane.